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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/404,940	09/23/1999	KENTARO TOYAMA	1018.034US1	8935

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EXAMINER

BOOKER, KELVIN E

ART UNIT PAPER NUMBER

2121

DATE MAILED: 08/22/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/404,940

Applicant(s)

TOYAMA, KENTARO

Examiner

Kelvin E Booker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 3 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 4-29 is/are allowed.
- 6) ☒ Claim(s) 30 and 31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Detailed Office Action*.

DETAILED ACTION

Response to Amendment

1. In Amendment "B", filed June 12, 2003 (see paper no. 16), claims two and three were canceled, claims 1, 4, 5, 9, 19 and 22 were amended, and claims 30 and 31 were added. The following Office Action is in response to the submitted Amendment.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claims 30 and 31** are rejected under 35 U.S.C. 101 because the invention as disclosed in claim one is directed to non-statutory subject matter. While the claims are in the technological arts, they are not limited to practical applications in the technological arts.

Specifically, the claims focus on a series of steps to be performed on a computer, but the ideas are disclosed abstractly from any particular practical application. Claim 30 focuses on "*a method for processing an image*" but fails to teach of the steps necessary to enable the aforementioned method. The claim merely cites the generation of an element [e.g., recommendation] involved in the processing of an image and the supporting characteristics corresponding to the element, but does not focus on the claimed method for processing the image.

To constitutionally interpret the word “process”, the Supreme Court has held that: “***A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject matter to be transformed and reduced to a different state or thing. ***The Process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be a secondary consequence.”(emphasis added) *Diamond, Commission of Patents and Trademarks v. Diehr and Lutton*, 209 USPQ 1, 6 (1981) quoting *Cochrane v. Deener*, 94 U.S. 780, 787-788 (1876).

This Constitutional interpretation of the word “process” is a long-standing one that the Supreme Court requires to be applied in interpreting 35 USC 101. *Diamond v. Diehr* at 6. Consequently, the use of that interpretation is Constitutionally required when we interpret the Federal Circuit’s standard that a “new and useful process” is one that produces a useful, concrete, and tangible result”. Cf. *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 47 USPQ2d 1596, 1600-1601 (Fed. Cir. 1998).

Applicant discloses no “certain substances” that have been “transformed or reduced” in that applicant’s claims disclose no specific computer-readable medium, no manipulation of specific data representing physical objects or activities (pre-computer activity), nor do they disclose any specific independent physical acts being performed by the invention (post-computer activity). The claims merely manipulate abstract ideas in general without limitation to a practical application where “certain substances” are transformed or reduced.

Claim 31 does not cure the defect in the claim 30. On this basis, claims 30 and 31 are rejected under 35 USC 101.

Allowable Subject Matter

4. **Claims 1 and 4-29** are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

As per claims 1, 9, 13, 19, 22 and 25, the cited prior art fails to explicitly teach of a computer-implemented method for training a neural network to provide an aesthetic determination of images, wherein an image and the corresponding aesthetic value is used as inputs to train the neural net; an aesthetic score is generated and outputted by the trained neural network based upon the image and related input values; and a recommendation to improve the aesthetic score for the image is provided based upon a gradient ascent.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The following is prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

A. Thaler, U.S. Patent No. 5,659,666;

B. Thaler, U.S. Patent No. 6,018,727;

C. Blazey et al., U.S. Patent No. 6,293,904;

D. Prabhu et al., U.S. Patent No. 6,306,077;

E. Thaler et al., U.S. Patent No. 6,356,884;

F. Machado et al., "Model Proposal For a Constructed Artist";

G. Machado et al., "Computing Aesthetics";

H. Crompt et al., "Data Mining of Multidimensional Remotely Sensed Images";

I. Perlovsky, L., "Emotions, Learning and Control";

J. Watanabe et al., "Analysis and Visualization of Properties of Free-Form Surfaces";

K. Purchase, H., "The Effects of Graph Layout";

L. Koch et al., "Coactive Aesthetics and Control Theory"; and

M. Toyama, K., "Head Parallax Tracking for Control of a Virtual Space: A Comparison of Algorithms".

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8. An inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Booker whose telephone number is (703) 308-4088. The examiner can normally be reached on Monday-Friday from 7:00 AM-5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri, can be reached on (703) 305-0282. The fax number for the organization where this application or proceeding is assigned is (703) 746-7239.

An inquiry of a general nature or relating to the status of this application proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

K.E.B.

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August 15, 2003



**ANIL KHATRI
PRIMARY EXAMINER**